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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/302,409	04/30/99	SHAUGNESSY	1375A1

PPG INDUSTRIES INC  
INTELLECTUAL PROPERTY DEPARTMENT  
ONE PPG PLACE  
PENNSYLVANIA PA 15272

IM62/1106

EXAMINER

MIRANDA, L

ART UNIT PAPER NUMBER

1775

DATE MAILED: 11/06/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

**Office Action Summary**

Application No.

09/302,409

Applicant(s)

SHAUGNESSY ET AL.

Examiner

Lymarie Miranda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 July 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-3, drawn to a cathode target sputter deposited film, classified in class 313, subclass 467.
  - II. Claims 4-36, drawn to coated article, classified in class 428, subclass 432.
  - III. Claim 37, drawn to a method of making a coated article, classified in class 65, subclass 54.
2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as use in a cathode ray tube instead of an infrared reflective coated article. See MPEP § 806.05(d).
3. Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by another and materially different method, such as a method that, instead of applying a coating, uses layers of laminates of the filler material to fill in the space between the glass sheets.
4. Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of

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operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions because invention I is a sputter coated cathode and invention III is a method of making an automobile transparency.

5. The several inventions above are independent and distinct, each from the other. They have acquired a separate status in the art as a separate subject for inventive effect and require independent searches (as indicated by the different classification). The search for each of the above inventions is not co-extensive particularly with regard to the literature search. Further, a reference, which would anticipate the invention of any one group, would not necessarily anticipate or make obvious the any of the other groups. For these reasons restriction for examination purposes is proper.

6. During a telephone conversation with Donald Lepiane, on September 28, 2000 a provisional election was made with traverse to prosecute the invention of Group II, claims 4-36. Affirmation of this election must be made by applicant in responding to this office action. Claims 1-3 and 37 are withdrawn from consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 5, 11-14 and 18-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 5 is indefinite because it is unclear regarding "the zinc oxide, tin oxide film". Is applicant referring to the electrical enhancing film ?

11. Claims 11-14 and 18-24 lack antecedent basis for "the coating stack". Further, claim 4 is drawn to an infrared reflective coating article.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 4-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glaverbel (GB 2311540) and Gillery (US 4610771)

Glaverbel discloses a coated sheet comprising a transparent substrate carrying two metal layers formed of silver or silver alloy and three layers of a transparent dielectric non-absorbent material (page 4, lines 13-24).

Suitable non absorbent materials include oxides such as tin oxide and zinc oxide, nitrides such as silicon nitride or a mixture thereof or a complex of non-absorbent materials such as zinc stannate. Each complete non-absorbent layer can include more than one of these materials and each layer can be a composite layer formed of successive subsidiary layers of different composition from each other, for example a zinc oxide layer split into two or more sub-layers of another non absorbent material. (page 7, lines 9-20).

The reference also disclose that a combination of tin oxide and zinc oxide is generally advantageous, whether in admixture or in successive sub-layers. The coated substrate may further comprise a thin layer of sacrificial material provided above and in contact with each metal layer. Suitable sacrificial metals include titanium and zinc (page 7, lines 24-33).

Regarding claims 34 and 35, as stated in page 1 lines 1-7 the coated transparent sheet is used for vehicle windows.

Regarding claim 36, the reference discloses that the glass assembly comprises two or more laminated sheets (page 2, lines 13-21).

Regarding claim 24, Glaverbel discloses a laminated assembly where the metal layers have a thickness between 16.5-22 nm and the non-absorbent layers have a thickness between 220-260 nm (page 4, lines 32-36). The sacrificial layer has a thickness around 15 nm (page 7, lines 34-36).

Glaverbel fails to disclose the exact thickness ranges for the layers. It would have been obvious to one having ordinary skill in the art at the time the invention was made

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to select the disclosed ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Glaverbel fail to disclose the zinc stannate film has a composition of 10-90 weight % of zinc and 90-10 weight % of Tin. However, Gillery discloses a film composition comprising multiple layers, preferably a highly reflective film such as gold, silver and copper sandwiched between metal oxide layers. The anti-reflection layer comprises a metal oxide, which is preferably zinc stannate (col. 3, lines 25-32). The zinc stannate film has a composition of preferably 10-90 percent zinc and 90-10 percent tin, where a zinc/tin ratio from 40:60 to 60:40 is preferred (col. 4, lines 2-7).

At the time the invention was made it would have been obvious to someone of ordinary skill in the art to use the zinc stannate composition of Gillery to make Glaverbel zinc stannate film. The suggestion/motivation would have been to produce a higher transmittance film.

### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lymarie Miranda whose telephone number is (703) 308-6370. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers


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for the organization where this application or proceeding is assigned are 305-3599 for regular communications and 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 306-0660.

  
LM

October 23, 2000

  
ARCHENE TURNER  
PRIMARY EXAMINER  
GROUP 1300